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Kwon

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[54] **INFORMATION INPUT APPARATUS HAVING FUNCTIONS OF BOTH TOUCH PANEL AND DIGITIZER, AND DRIVING METHOD THEREOF**

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[52] **U.S. Cl.** 178/19; 345/156; 345/173

[58] **Field of Search** 178/18, 19, 21; 345/173, 174, 156, 179, 182

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,293,734 10/1981 Pepper, Jr. 178/18
4,933,660 6/1990 Wynne, Jr. 338/114

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[57] **ABSTRACT**

An information input apparatus having both functions of touch panel and digitizer is disclosed including a stylus pen for applying a power source and for touching, a panel having upper and lower substrates, a first resistive layer formed on the upper substrate, a second resistive layer formed on the lower substrate, and a spacer for maintaining a predetermined distance and insulation between the first and second resistive layers, and mode selection means for selectively switching between ground and a power source for contact with the second resistive layer, to thereby select an operation mode for operating the panel as a touch panel or digitizer.

8 Claims, 5 Drawing Sheets

